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ABSTRACT

This paper describes two studies conducted with high school students doing library research and writing research papers, with the objective of examining the effectiveness of this type of assignment. The students were all in grade 11, the first group in Canada, the second in the United States. Students were observed in the classroom before they received their research paper assignments, in the library while searching for information, and while they wrote their papers. Formal and informal interviews were conducted, and their notes, rough and final drafts and original sources were examined. Both productive and counterproductive elements of the assignments were identified. The teacher's guidance throughout the process was appreciated by most students; students liked having the process broken down into manageable steps, which they found less intimidating than being given the whole task to do on their own. The teacher brought some of the needed reference books into the classroom and drew a map of the library to help students find materials. Examples provided in handouts made writing a thesis statement and an outline easy. Suggesting that students did not have to write their rough draft in order also seemed to help. The first study revealed a great deal of plagiarism. Students objected to: copying directly from sources onto note cards; rewriting of their thesis statements by the teacher, for those who were struggling; and the unavailability of computer lab time for word processing. Another counterproductive behavior come from an incomplete mental mode of the potential role of a school librarian. This study concludes that school librarians, in cooperation with teachers, must make every library research project meaningful to students. (AEF)

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STUDENT RESEARCH: PRODUCTIVE OR COUNTERPRODUCTIVE?

A Presentation for the
International Association of School Librarianship Conference
July/August 1996

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Student Research: Productive or Counter-Productive?

"We're going to the library to do research." "You're going to write a research paper." How often do students hear these instructions? How do they react when they hear them? Library research and research papers are common practices used by many teachers, at many grade levels. Librarians are familiar with the group descending on the library, waiting impatiently through the explanation about the resources they will need, and exploding into the stacks to hunt down what they need. Librarians and teachers assume that the students will learn something through the project and that the research will be productive. Students assume that this is one more job they must do, one more chore they must complete. But what do they learn? What is really accomplished by assigning a research paper?

Teachers and librarians have the best of motives in expecting students to conduct library research. Their worthwhile objectives theoretically should be possible to reach by assigning research. Students will learn locational skills by looking for information in a variety of sources. As they become familiar with these sources and figure out how to use them, they develop skills in analyzing how different materials are organized. As they encounter information expressed in different ways and not always in agreement, they should learn to deal with ambiguity. They will find out that people don't always agree with each other and that some information may not be reliable. With this discovery, students should learn to evaluate the credibility and analyze whether the information is what they need. As they analyze what the information says and determine whether it fits into their topic, they should be learning to organize their thinking. By sorting and categorizing the information, we hope they are sorting and categorizing their thoughts. As they choose which pieces of information to use from which sources, and as they think about multiple pieces of information and determine their relationships to one another, they should be learning how to synthesize that information. We also hope that as they gather information, they are learning more about their topic. They should be determining a specific focus within their topic and learning how to stick to that focus. As they determine whether information is related to that focus, they could be learning to analyze how ideas are related to one another. And perhaps, with the new knowledge they gain from learning more about the topic, they might be developing new interests. There are probably many other worthwhile objectives in conducting library research, but this list covers quite a few.

Not all library research is assigned with a research paper product in mind, but the research paper is certainly a very common end result. What are teachers' objectives in having students write research papers? All the objectives already mentioned can also be applied to the research paper part of the assignment. Beyond that, another objective is to teach students to organize their information into a logical sequence, beginning with a statement of what the paper will try to achieve, then the information to back up this goal,

and ending with a statement about what has been accomplished through the presentation of this information. The hope of the teacher, as the students assemble this information logically, is that they will also gain practice in expressing themselves cogently and will be able to use their language more clearly and concisely. The ultimate goal of assembling information into a paper format is to communicate these ideas to someone else. While in the classroom, that someone else is often the teacher, but the communication might also be directed to the other class members, other students in the school, or other members of the community. For college-bound students, the expectation is that they will be required to write research papers in college, and these students will be familiar with this common format. The long-term extension of the idea is that some students will eventually write for a living, perhaps as journalists, researchers, or authors, and will have learned to communicate through writing. Again, there are probably many more objectives held by teachers who assign research papers, but these are a beginning.

Do students gain all those things from conducting library research and writing research papers? Are these assignments as productive as we hope? Are there elements of the assignment that might be counterproductive, achieving results that we never intended?

I have conducted two research studies with high school students in which I spent weeks and months watching them do library research and write research papers. Although it is impossible to get inside their heads and to know all their thoughts, I was able to gain enough data about their thinking and their behaviour to provide food for thought. Let's look at what has emerged from these two studies so far. The second one is not complete. The data has been collected and analysis is now taking place, much of it leading to more questions rather than providing a lot of answers.

I'd like to give you a little background on how the data was collected, so you can get to know these students a little better. I conducted these studies in two different high schools, one in Canada, one in the U.S. The schools shared some similarities: both were in small, middle class communities, just outside major urban areas. Both schools shared a good reputation academically. The students were all in grade eleven, the first group in Canada, the second in the U.S. Overall, there were three classes involved, in the subjects of English and Social Studies. There were actually four teachers connected with these classes, because one class was observed in both an English and a Social Studies class. The students demonstrated various ability levels. The Canadian students were International Baccalaureate students and the American ones were a heterogeneous group.

While I was with these students, I did several things. I observed a lot, in their classrooms before they received their research paper assignments, in the library while they searched for information, and some I watched while they wrote their papers. I talked with them. Some interviews were formal, some informal conversations. Many times I designed specific questions to ask them, but I let their answers guide the questions too. I

looked at the notes they took, the rough drafts they wrote, and the final copy of the paper they turned in. I also looked at the original sources from which they got their information.

The two studies weren't conducted in precisely the same manner, although the second study was modelled on the first. The second study involved a research assistant, while the first I conducted alone. The research assistant held informal conversations with students while I carried out formal interviews. We both observed the students' behaviour and both of us are now involved in data analysis. Another difference was that while the first study involved two student groups, three teachers, and two subjects, the second one involved only one group, one teacher, and one subject. This one class did most of their work during class time, including the writing of the research paper, which allowed us to observe that stage, an opportunity not available in the first study. To gather data from the writing phase in the first study, students were trained to think out loud as they wrote, and they produced audiotapes of what they were thinking as they wrote their papers.

Another element that was different between the two studies was that the first time, the books related to the subject were pulled ahead of time for the classes, which meant I couldn't observe as much of their locational efforts as I would have liked to. The second group did not have books pulled for them. They went to the shelves and located their own books, after receiving direction from their teacher about how to use specific reference books. With this second group, the teacher gave more on-going direction and instruction throughout the assignment, possibly because these students were less experienced at writing research papers than the International Baccalaureate students were assumed to be.

Another difference between the studies was my purpose. The first one had a more generalized purpose because it was the first one done in this area. I wanted to know the nature of their thinking as they wrote research papers. For the second study, I wanted to examine a potential link that I found in the first study--a possible connection between whether students were oriented to process or product and the degree to which they tended to plagiarize from their original sources. This link was shaky at best, and a great deal more information was needed to understand whether the connection was imagined or real.

There were some differences in the tasks that the students were assigned: two English classes wrote about a topic related to Elizabethan times or Shakespeare, one wrote about an American author of the 19th or 20th century, and the Social Studies class wrote on whether the Reign of Terror was an inevitable product of the French Revolution. The group writing about the American author was the group in the second study.

The involvement of the librarians in the two schools was slightly different. In both schools, the librarians introduced relevant materials to the students and were available to answer questions. The librarian in the first study circulated among the students, offering assistance, while the librarians in the second study didn't. Most

students in both studies did not ask questions of the librarian or accept assistance from her when offered.

The teacher involvement in the two studies varied. Their behaviour ranged from the teacher in the second study who provided students with on-going instruction and guidance, taking them step-by-step through the process, through the teacher in the first study who answered students' questions, monitoring their activity and being obviously available to them, to the other two teachers in the first study who sat watching the students at a distance, answering questions only when approached.

Since my primary goal in the second study was to find out more about why students plagiarize, I want to address that point first, in terms of preliminary findings. Please remember that the analysis is not complete and that what I can say based on partial analysis might be different from what I will be able to say in a few weeks or months. At this point, I can say nothing about the link with process or product orientation, because that element has not been isolated yet. What I can compare is the amount and level of plagiarism I found and speculate as to why there is a difference.

In the first study, I found a great deal of plagiarism, which I preferred to call "copying" at that time, since I felt strongly, but had no hard evidence, that the students didn't intend to cheat but instead were using the only technique they knew. To me, the word "plagiarism" implied an intent to deceive. Since then, I've come across the term "unintentional plagiarism" which makes me feel less strongly about an implication of deceit being inherent in the term. Now I use both "plagiarism" and "copying." Although my experience told me that students plagiarize, I was unprepared for the amount that I found. The copying ranged from using the exact words, paragraph after paragraph, to replacing many words with synonyms, but copying the sentence and paragraph patterns.

In the second study, I found less exact copying done by students. It seems that these students made an effort to paraphrase but it was poorly done. Though plagiarism still existed, it tended to take the form of replacing some words with synonyms, but retaining the sentence and paragraph patterns.

I don't know yet whether the total amount of copying is different between the two groups, but the type is. Why the difference between the types of copying found? I can identify some possibilities, based on observation, but these are only suggestions. It is possible that because the teacher in the second study emphasized avoiding plagiarism on a regular basis, not just once the first day, that students made more effort to avoid it. The teacher provided written information about how to avoid plagiarizing and talked about it in class, so students at least knew the name of an alternative to plagiarism, even though they were novices at carrying it out. And finally, they knew they were handing in their note cards, which they were required to copy directly from the source, so perhaps they feared discovery when the teacher compared their cards with their text, something she

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said she would do. Plagiarism and paraphrasing were mentioned only in passing by the teachers in the first study and none required note cards to be handed in.

Perhaps these students made progress towards learning to paraphrase. One research paper is not enough evidence to make a conclusive statement. But in the process of learning that, were there other counterproductive things that happened? At this point, the preliminary analysis has led to more questions than answers. To talk about how this assignment was productive or counterproductive, I need to describe the sequence of activities. In the first study, students received their topics and initial instructions in their classrooms, then went to the library to gather information. In the library they were essentially on their own, although they received varying amounts of assistance from their teachers. After two weeks in the library, students worked on writing their papers on their own time, which meant that most of them did the rest of their work at home.

In the second study, students picked their author while still in the classroom. Then the teacher discussed the assignment in the classroom for a day and a half. She talked about the requirements of the paper--what they must do and what she wanted them to turn in. She talked about some of the learning objectives of the assignment and provided a detailed handout on all the steps of the process. She discussed plagiarism and how to avoid it. She went through her expectations for bibliography cards and note cards.

The next day the students began their two week stint in the library. During that time they created a working bibliography, on cards, then copied directly from the sources on to note cards. The teacher emphasized that these note cards were to be in the exact words of the original source and that everything was to have quotation marks around it to indicate that these words were not their own. Students handed in their bibliography cards for checking and the teacher counted their note cards to see if they had at least the required minimum at the end of the two weeks.

When the students returned to the classroom, the teacher lectured on each phase of writing the paper as they reached that stage. They began writing their thesis statements and turned them in to the teacher before they could go on. Then they wrote and handed in their outlines. Both thesis statements and outlines were to be modelled after examples the teacher provided. Students then wrote rough drafts, which they turned in to be checked. They learned editing techniques and read their papers orally in partners to make improvements cooperatively. Finally they wrote their final papers and took them home to type.

As we examined this process, talked to students about what they were doing, and analyzed the final papers, we identified some productive elements of this assignment and others that were counterproductive. Some of the elements were productive in one way and counterproductive in another. And some were beneficial to some students and not to others. Since this is such a complex activity and individual students are different, it is difficult to make any absolute statements. But I offer these ideas as food for thought.

What elements of the project were productive? First of all, the teacher's guidance throughout the process was appreciated by most students. All too often, students are abandoned by their teachers and librarians after they've found the information they can use and these students valued the on-going direction. Many students also liked having the process broken down into manageable steps, which they found less intimidating than being given the whole task to do on their own.

The teacher brought some of the reference books they would use into the classroom and drew a map of the library to help them find these materials. This helped them go directly to the sources when they arrived in the library.

Another element that made writing a thesis statement and an outline easy for the students was the examples provided in the handout. Since they were told to model their own on these examples, students did exactly that and developed an idea of what these elements should look like. And finally, suggesting that as they write their rough draft, they don't have to do it in order seemed to free some students from writer's block. They were able to work on an easy part first, and then tackle the more difficult parts later.

What was counterproductive? Students strenuously objected, and with some justification I think, to copying directly from sources on to their note cards. They found this to be a waste of time and effort and never were sure why they had to do that. I suspect the purpose was to give them an opportunity to find direct quotations in them later, not needing to decide immediately which passages would be appropriate to quote. That purpose was achieved, but not without cost. The boredom and resentment factors were high, and most students said they would not do that again, given a choice.

Another self-defeating behaviour was a tendency to write thesis statements for students who were struggling, or students whose statements were of mediocre quality. I'm sure this was done to model a good thesis statement, but some students felt no ownership of the resulting statement and were discouraged. This was true especially of one girl who had worked out a thesis statement cooperatively with her friend, only to be told to replace it with a much more sophisticated statement written by the teacher. The rejection of her simple and adequate thesis statement, of which she had been proud, was a blow to a girl whose confidence in her own ability was already low.

At the beginning of the project, students were promised computer lab time for word processing. Due to scheduling difficulties, this turned out to be impossible, which disappointed some students but mattered much less to those who had computers at home. Had this access been available, though, more on-going proof-reading and revision could have been encouraged and might have actually taken place. As it was, the number of typographical errors appearing in the final papers, most of which were typed on word processors, indicated a lack of final proof-reading and editing. Had they been able to take

advantage of the power of a word processor on their rough drafts, editing and revising throughout the process, they would have avoided a lot of errors caused by mindless typing of something they had already handwritten.

Another counterproductive behaviour came from an incomplete mental model of the potential role of a school librarian. In conversation, this teacher often expressed her frustration with her inability to get to all the students as they needed assistance. Had she planned this unit cooperatively with the librarian with an expectation of cooperative teaching, she would have had another person to share that task. The librarian could also have shared the task of introducing the reference materials and teaching their effective use. The librarian was having no success at implementing cooperative planning and teaching in this school. Teachers had no concept of this type of cooperative activity or of librarians capable of providing this type of classroom and teaching support.

Where does this preliminary analysis bring us? If we look at our original objectives we can see that most of them may have been met through this project, to some extent at least. But what has been learned that might not be so desirable?

Copying behaviour may have been reinforced by copying everything word for word on note cards and by copying the thesis statement and outline patterns. Frustration was increased in some students through various requirements: some were frustrated by having to progress through the stages in a lockstep fashion, others were discouraged by having to wait so long for assistance, and some were disappointed that promised lab time for word processing did not materialize.

In this second study, emphasis was placed on process throughout. But the processes were usually formatting processes: how to make bibliography cards, how to make note cards, how to copy a thesis sentence pattern, how to copy an outline pattern, how to structure the paper (introductory paragraph, at least three body paragraphs, conclusion). Seldom did they think about the ideas contained in the information and how they were related to other ideas. Many ideas were copied into the papers with no understanding of what they meant, a fact made clear to us as we looked at the original sources and found how badly they had distorted the meaning of the original statement in their attempts to paraphrase something they hadn't understood in the first place.

The theme of this conference includes the words "vision" and "imperatives." My vision is that we, as school librarians in cooperation with teachers, will find it imperative to make every library research project meaningful to students. We will examine each step of the project and figure out ways to help them grasp meaning in information, make sense of ideas, and learn more than a formula or a format. We will help students use their time in as productive a manner as possible, avoiding mindless activity. We will provide students experiences that teach them information skills they can transfer to real life. We will transform them from scribes to thinkers.

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